

REMARKS

Claims 1-3, 5, 6, 29-31, 33-44, and 46-52 were presented for examination and were rejected.

The applicants have amended claims 51 and 52 to overcome an indefiniteness rejection. No other amendments have been made.

The applicants respectfully request reconsideration in light of the amendments and the following comments.

35 U.S.C. 112 Rejection of Claims 51 and 52

Claims 51 and 52 have been rejected under 35 U.S.C. 112, Second Paragraph, as being indefinite.

The applicants have amended claim 51 to change the term "the first faces" to "the first surfaces" (emphasis added). The applicants have also amended claim 52 to change the term "the second faces" to "the second surfaces" (emphasis added).

The applicants point out that with these amendments, there is appropriate antecedent basis for the claims in claim 1, from which they ultimately depend.

The applicants respectfully submit the rejection to the claims is overcome.

35 U.S.C. 103 Rejection of Claims 1-3, 5, 6, 29-31, 33-44, and 46-52

Claims 1-3, 5, 6, 29-31, 33-44, and 46-52 have been rejected under 35 U.S.C. 103 as being unpatentable over Houston et al., EP 1254645A1 (hereinafter "Houston") in view of Palmaz et al., U.S. Patent 6,190,404 (hereinafter "Palmaz"). The applicants respectfully traverse the rejection.

Claim 1 recites:

1. An internal formation for a conduit, the formation comprising a longitudinally extending member adapted to extend along an inside surface of at least a portion of the length of the conduit, the longitudinally extending member having an asymmetric profile in a direction transverse of the longitudinal axis of the member, wherein a first surface of the longitudinally extending member is at least partially directed towards an inlet of the conduit and a second surface of the longitudinally extending member is at least partially directed towards the outlet of the conduit and wherein the angle that the first surface subtends with a diameter of the conduit extending through a portion of the profile of the longitudinally extending member closest to the centre of the conduit is less than 20°, and wherein the internal formation effects spiral flow of a fluid flowing through the conduit.

(emphasis added)

Neither Houston nor Palmaz teach or suggest, alone or in combination, what claim 1 recites — namely, the longitudinally extending member having an asymmetric profile in a direction transverse of the longitudinal axis of the member of a conduit.

The Office acknowledges that Houston fails to disclose that the longitudinally extending member has “an asymmetric profile in a direction transverse of the longitudinal axis of the member” (see page 3 of the Office action, last paragraph). The applicants agree with the Office’s observation of Houston.

The Office then goes on to argue that Palmaz teaches a stent having grooves within or in a surface that may be asymmetrical (see page 4, first paragraph). Thus, according to the Office, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the ridges of Houston with an asymmetric profile as taught by Palmaz for the predictable result of inducing helical flow.

The applicants respectfully point out that there are several flaws of logic in the Office’s argument. **First**, Palmaz is not in the same technical field as the passages in Houston to which the Office refers. Palmaz relates to an intravascular stent (see column 1, line 11 of Palmaz). However, the passages of Houston to which the Office refers (namely column 1, lines 56 to 58, column 2, lines 10 to 12 and 15 to 10 [sic] and Figure 1) do not relate to a stent. Instead, these passages instead relate to tubing (see column 1, lines 54 and 55 of Houston). Houston defines “tubing” as referring to “all types of conduit which transport or contain liquid or gaseous fluid” (see column 4, lines 27 to 29 of Houston *et al.*). Clearly the stent of Palmaz does not, in and of itself, transport or contain liquid or gaseous fluid since the stents described in Palmaz comprise numerous apertures (see Figure 8 of

Palmaz *et al.*) from which liquid or gaseous fluid would immediately leak. Therefore, the stent described in Palmaz is not "tubing" within the meaning of Houston.

Second, the Office states that "it would have been obvious to one of ordinary skill in the art [...] to have provided the ridges of Houston *et al.*, with an asymmetric profile, as taught by Palmaz *et al.*" However, this statement does not follow from the facts of the two cited references. Consider that Palmaz is concerned solely with the provision of grooves (item 400 of Palmaz *et al.*). There is no reference at all to the grooves in Palmaz being instead ridges. Therefore, it is completely illogical for a skilled person to apply features of the grooves of Palmaz to the ridges of Houston. On the contrary, if a skilled person were to consider combining the teachings of Houston and Palmaz, then he or she would, if anything, produce the tubing of Houston with grooves instead of the ridges, since grooves are taught in Palmaz. Of course, pending claim 1 recites the provision of a "longitudinally extending member"—which is a ridge-like component, not a groove-like component. Thus, if a skilled person were to combine the teachings of Houston with those of Palmaz, then he or she would arrive at a product which is outside of the scope of pending claim 1.

Third, the purpose of the groove disclosed in Palmaz is completely different from the purpose of the grooving disclosed in Houston. In Houston, the grooving is for the purpose of inducing helical flow in fluid passing through the tubing (see column 1, lines 54 to 58). In Palmaz, the purpose of the groove is to increase the rate of migration of endothelial cells upon the inner surface of the intravascular stent (see column 3, lines 26 to 28 and column 5, lines 60 to 62 of Palmaz *et al.*). Accordingly, the feature of the groove as disclosed in Palmaz is *prima facie* completely irrelevant to the tubing of Houston. As explained in column 4, lines 12 to 19 of Palmaz, the apertures between the strut 203 result in tissue mounds 211 protruding between the struts when the stent is implanted within an artery 290 (see Figure 1 of Palmaz *et al.*). The mounds of tissue 211 in Palmaz may retain endothelial cells, and the purpose of the grooves 400 in Palmaz is to increase the rate of migration of endothelial cells upon the inner surface of the intravascular stent. However, because the tubing of Houston does not have apertures (see Figure 1 of Houston), it will therefore not have the protruding tissue mounds disclosed in Palmaz. Therefore, the purpose of the grooves as disclosed in Palmaz is irrelevant to the operation of the tubing of Houston.

The difference in purpose of the grooves in Palmaz and the grooving in Houston is also reflected in the different sizing of the respective features. In Palmaz, the depth of the

grooves is disclosed as being "within a range of approximately one half to approximately ten microns" (see column 6, lines 39 to 41). No specific sizing is disclosed in Houston, but Figures 1 and 2 illustrate blood flow tubing and, given the size requirements of blood flow tubing, in order for it to be implanted into the human body it is implicit that the grooving shown in Figure 2 in Houston must be of the order of millimeters in depth instead of microns.

In summary:

- i. First, the teaching of Palmaz relates to stents, while the teaching of Houston, which relates to the provision of grooving, concerns blood flow tubing. Tubing is a different technical field than stents.
- ii. Second, Palmaz relates to a provision of a groove, not a ridge. Therefore, even if a skilled person were to combine the disclosure of Palmaz with that of Houston, then the result would be a device (either a stent if the person followed Palmaz or blood flow tubing if the person followed Houston) with grooving, and not a "member" as recited in pending claim 1.
- iii. Third, the purpose of the grooving in Palmaz is completely different from the purpose of the grooves in Houston, so it would counterintuitive to combine the teachings of the two cited references. Indeed, there would be a practical difficulty in combining the teachings of the two references since they refer to grooving of very different depths.

For these reasons, the applicants respectfully submit that the rejection of claim 1 is traversed.

Because claims 2-3, 5, 6, 29-31, 33-44, and 46-52 depend on claim 1, the applicants respectfully submit that the rejection of them is also traversed.

Request for Reconsideration Pursuant to 37 C.F.R. 1.111

Having responded to each and every ground for objection and rejection in the last Office action, applicants respectfully request reconsideration of the instant application pursuant to 37 CFR 1.111 and request that the Examiner allow all of the pending claims and pass the application to issue.

If there are remaining issues, the applicants respectfully request that Examiner telephone the applicants' attorney so that those issues can be resolved as quickly as possible.

Respectfully,
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